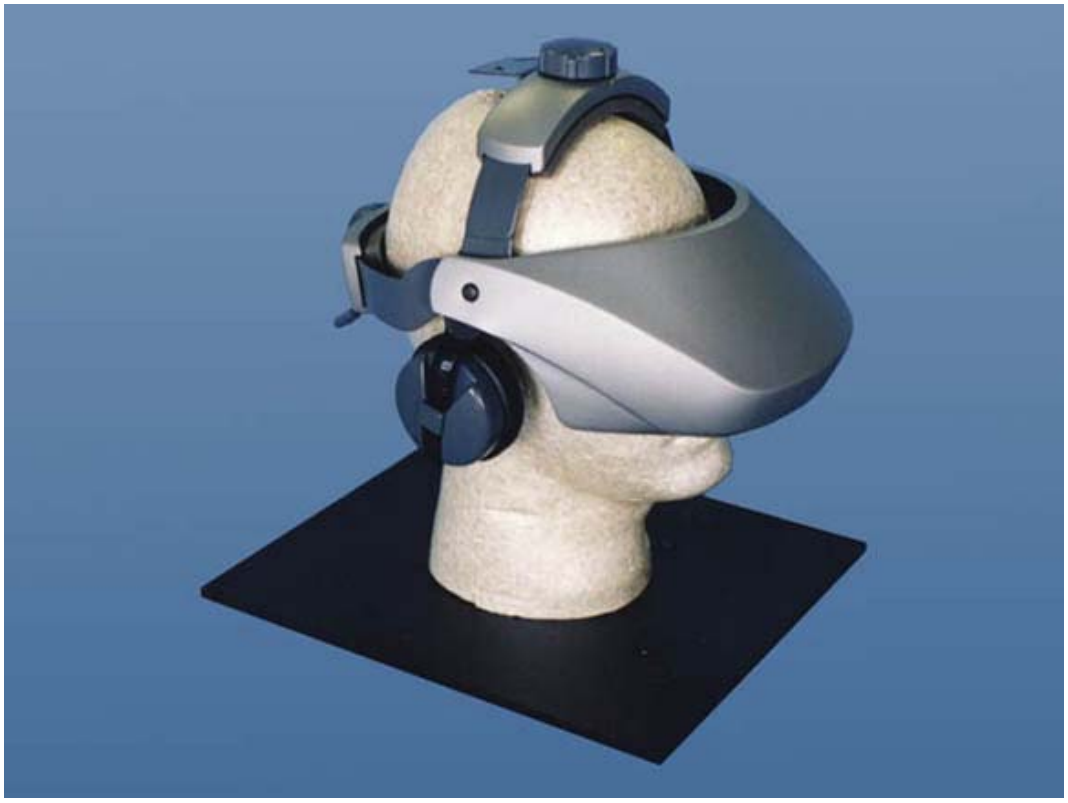
5DT HMD 800 Series



User's Manual

Fifth Dimension Technologies

www.5DT.com

5DT HMD 800

Head Mounted Display

5DT HMD 800 Stereo

Stereo Head Mounted Display

User's Manual

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Unless otherwise indicated, the term "5DT HMD 800" in this manual refers to both the standard and the stereo HMD. The stereo HMD will be indicated as "5DT HMD 800 Stereo" where there are differences between the two devices.

Version 2.00 *January 2002*

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1 Introduction

Thank you for choosing this product. We trust that you will have a lot of fun and satisfaction using it.

The 5DT Head Mounted Display (HMD) 800 offers the user an affordable immersive viewing experience with 1.44 million pixels of resolution. This product is particularly useful for research and development, virtual reality simulation, computer graphics applications, 3D CAD systems, virtual showrooms and personal entertainment.

Features

- Affordable quality
- Adjustable top/back ratchets
- Mono or stereo models
- Cable organizer
- Mounting base for head trackers
- Crisp SVGA image
- Extreme comfort
- User configurable immersivity
- Lightweight
- Flip-up mode for reality checks
- High quality headphones

Video Modes – 5DT HMD 800

- SVGA
- Composite Video (PAL, NTSC)
- S-Video

Video Modes – 5DT HMD 800 Stereo

- SVGA – Mono
- SVGA – Stereo (Line Sequential)
- SVGA – Stereo (Field Sequential)
- SVGA – Stereo (Separate Inputs)
- Composite Video (PAL, NTSC)

2 Stereo Models

Up to January 2002, the 5DT HMD 800 could only be used in Separate Input 3D mode. This unit can be identified by its two control boxes. The following points apply **only** to users who have this version.

- The package of the 5DT HMD 800 should contain the following:
  - 2 x SVGA Cables
  - 2 x RCA to RCA Cables
  - 2 x Power Adapters
  - 2 x SCART to RCA Cables
  - 2 x S-Video Cables
  - 1 x Audio Cable
- The 5DT HMD 800 Stereo is supplied with 2 power supplies and each control box must be connected to a power supply.
- To connect your 5DT HMD 800 Stereo to a PC, follow these steps:
  a. Connect the supplied D-sub SVGA cable to the 5DT HMD 800 control box and to the output of your video card for the left hand display.
  b. Repeat Step a for the right hand display.
  c. Attach the Audio connection as in Figure 5 to the left handed display control box.
- Please note that if you are using the 5DT HMD 800 Stereo with a single video output, a video splitter is required, which can be obtained from 5DT. The video splitter will split the video input into 2 (or more) identical signals that can be separately fed into the HMD's inputs.
- For the 5DT HMD 800 Stereo, follow the instructions for adjusting screen flicker with the 5DT HMD 800, but take note that the right screen flicker will need to be adjusted with the right control box and the left screen flicker with the left control box.

3 Safety First!

Please take **CAREFUL NOTE** of the following **SAFETY ISSUES**.

Due to medical safety reasons, this product should **not** be used by the following persons:

3.1 Individuals with Epilepsy

Individuals who have been diagnosed with Epilepsy, or who have a personal or family history of Epilepsy, should **not** use this product because it may trigger epileptic seizures. If you have any doubts about this, consult with a medical doctor and/or neurologist before using the product.

3.2 Individuals Younger than 10 Years of Age

The eyes of a person younger than 10 years of age are still developing the ability to focus. Therefore, individuals younger than 10 years of age should **not** use this product because it may adversely affect the focusing ability of their eyes.

3.3 Termination of Usage

STOP using this product **IMMEDIATELY** if:

- You experience discomfort of any nature
- You develop a headache
- You start feeling nauseous
- You start experiencing vertigo (dizziness)

Take special care to adjust the Interpupillary Distance (IPD) [distance between the displays]. An incorrect IPD will result in a fuzzy / unfocused image. Your eyes will strain to correct the fuzzy / unfocused image and this will normally cause a headache.

Do not wear the product for longer than one hour at a time. When this period has expired, take a break for at least 10-15 minutes before wearing the device again. A warning to stop using the device will appear in the displays after two hours.

3.4 Electrical Safety

- Make sure that the line voltage of the power adapter (AC adapter) is the same as the line voltage of the country where the HMD will be used. For example if the line voltage of the power adapter is 100-120V AC, it should not be used in a country where the line voltage is 220-240V. Using an incorrect power adaptor may cause it to explode.
- Unplug the power adapter when the unit is not in use.
- Always use the designated AC power adapter (included with the product).
- To prevent electric shock and/or fire, do not unplug by pulling on the cord and do not touch the power plug with bare hands.

- Do not use the product in a wet environment (such as a bathroom).

3.5 Cleaning the Product

- Always unplug the power adapter before cleaning the product to prevent electric shock and/or fire.
- Remove dust on the headset by using a soft cloth.
- To remove stains or dirt, wipe the HMD with a soft cloth dampened with a neutral detergent.
- Do not use solvents like paint thinner, benzene or other products that may damage the surface of the product.

3.6 Personal Hygiene

- Alcohol wipes are useful for cleaning the HMD between users for multiple user applications. Alcohol will remove skin, oil and makeup that has been transferred to the HMD.
- The front, back and top foam inserts should also be cleaned or replaced as necessary. Soak the foam inserts in a mild detergent, rinse lightly and leave in the sun to dry.
- There have been anecdotal reports of lice/pest transmission between HMD users in multiple user applications. There are sprays available that will kill the lice on furniture and clothing. These sprays are **hazardous** and you need to judge the benefits versus the risks of using these sprays.
- Make sure to switch the HMD **off** and to cover the optics before wiping it or spraying it.

4 Package Contents

4.1 Parts – 5DT HMD 800

Please check that your 5DT HMD 800 package contains all the necessary cables and accessories as illustrated in Figure 1. It will be difficult to properly install and use the product if any item is missing. To connect the HMD to your computer or video output, follow the instructions in the Section 5.

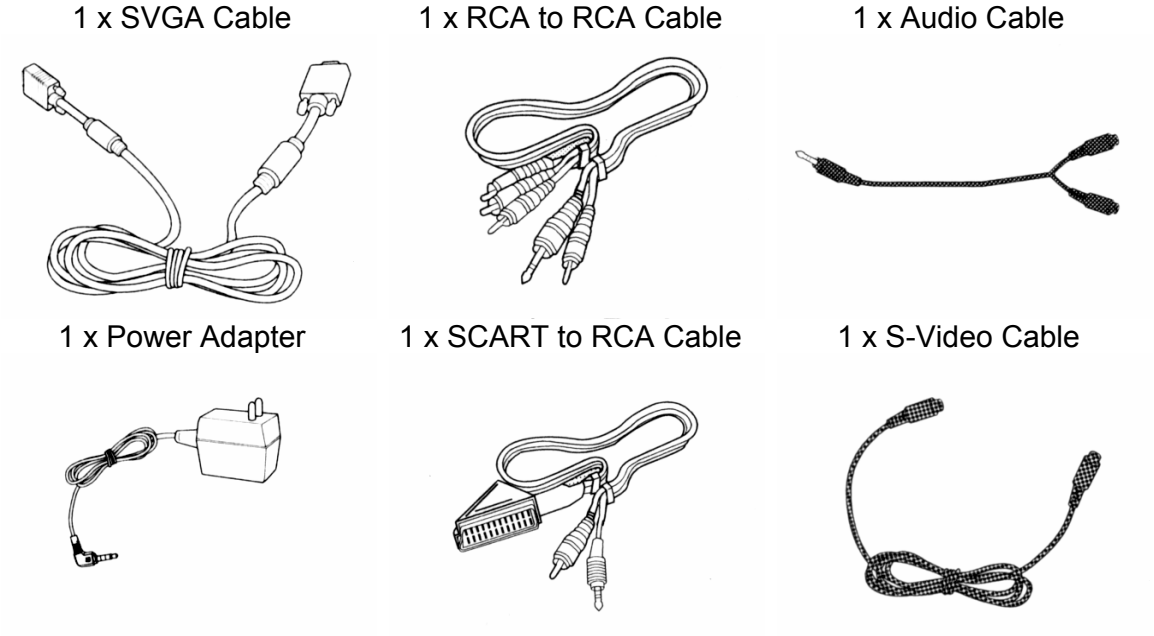

Figure 1 - 5DT HMD 800 Accessories

4.2 Parts – 5DT HMD 800 Stereo

Please check to see that your 5DT HMD 800 Stereo package contains all the necessary cables and accessories as illustrated in Figure 2. It will be difficult to properly install and use the product if any item is missing. To connect the HMD to your computer or video output, follow the instructions in Section 5.

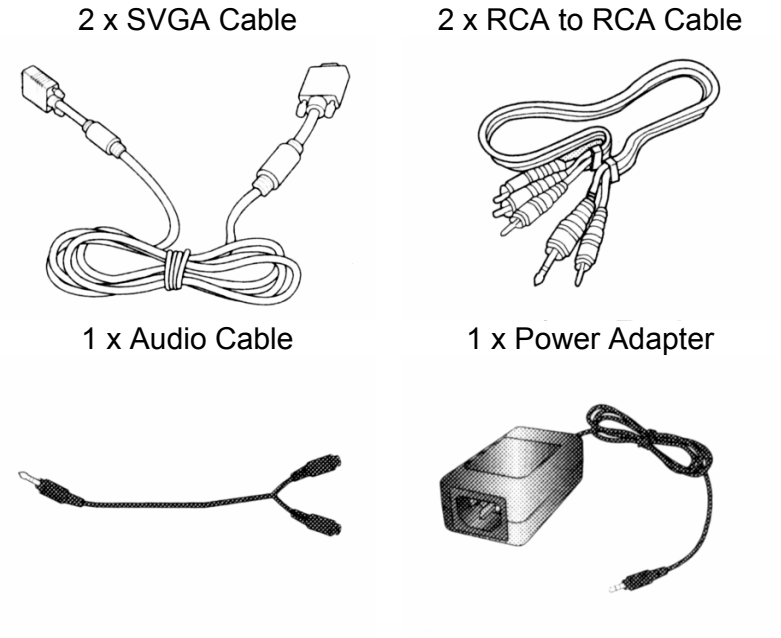

Figure 2 - 5DT HMD 800 Stereo Accessories

5 Connecting the HMD

5.1 Connecting Electric Power

To connect power to your 5DT HMD 800, please follow these steps:

a. Connect the power input terminal of the AC adapter to the DC power input terminal of the control box (Figure 3 and Figure 4).

Make sure that the line voltage of the power adapter (AC adapter) is the same as the line voltage in the country where the HMD will be used. For example if the line voltage of the power adapter is 100-120V AC, it should not be used in a country where the line voltage is 220-240V. Using an incorrect power adaptor may cause it to explode.

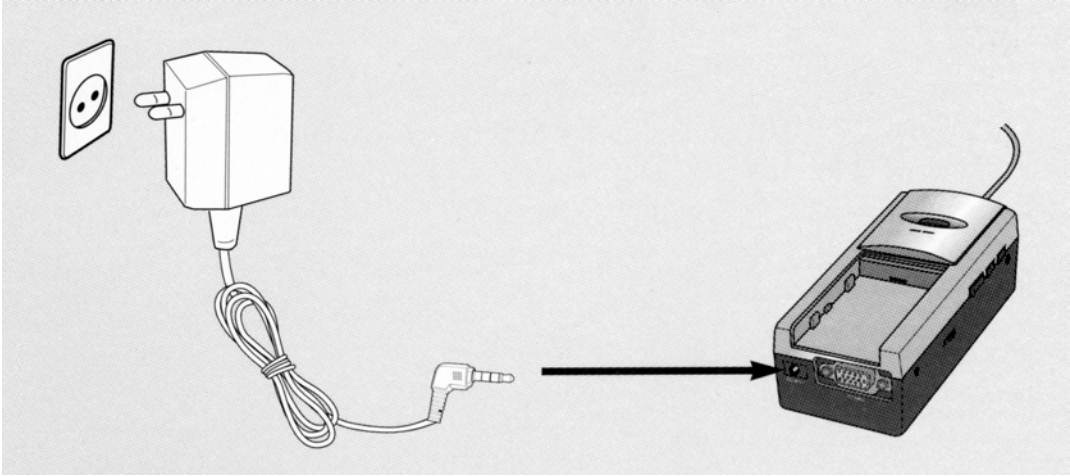

Figure 3 – Connecting Electrical Power to the 5DT HMD 800

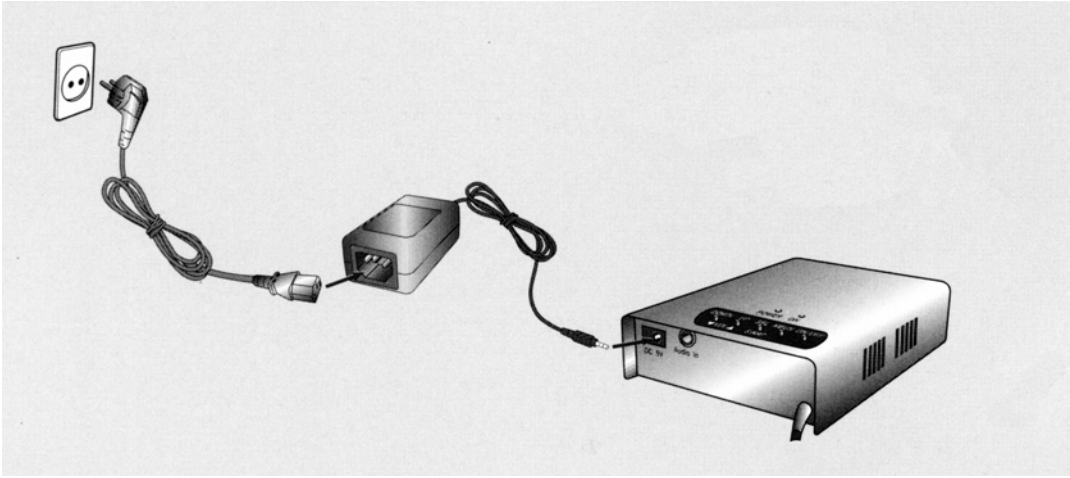

Figure 4 – Connecting Electrical Power to the 5DT HMD 800 Stereo

b. Plug the AC power adapter into the power outlet on the wall, or into a PC power plug, according the type of power supply supplied with your HMD.

c. Turn on the AC power switch.

d. Press the Power On/Off button on the control box and the power lamp will switch on.

5.2 Connecting your HMD to a PC

For the 5DT HMD 800

To connect your 5DT HMD 800 to a PC, follow these steps:

a. Connect the supplied D-sub SVGA cable to the 5DT HMD 800 control box and to the output of your video card.

b. Connect the audio connection cable of the 5DT HMD 800 as shown in Figure 5.

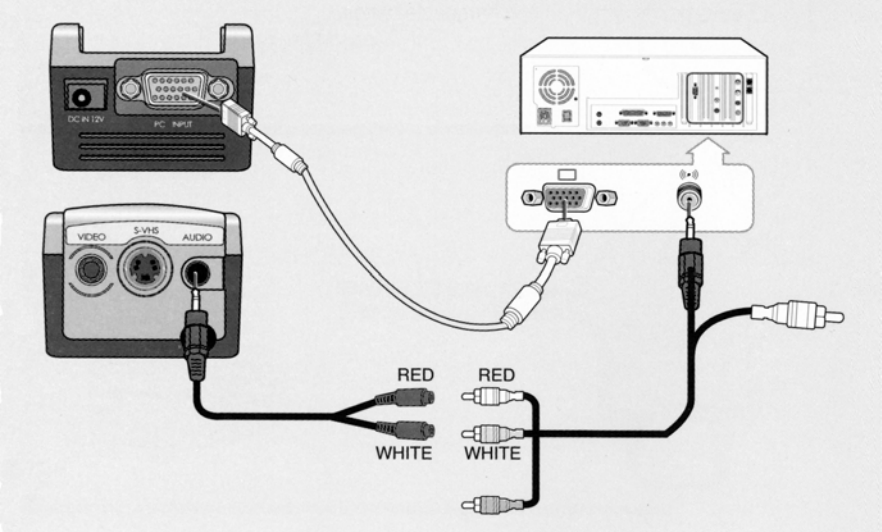

Figure 5 – Connecting the 5DT HMD 800 to a PC

For the 5DT HMD 800 Stereo

To connect your 5DT HMD 800 Stereo to a PC, follow these steps:

a. Connect the supplied D-sub SVGA cable to the 5DT HMD 800 control box and to the output of your video card as in Figure 6.

b. Attach the Audio connection as in Figure 6.

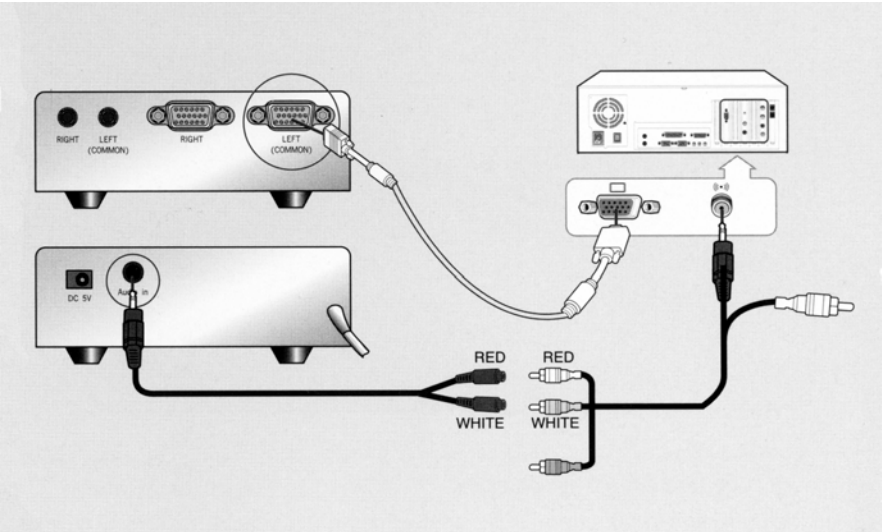

Figure 6 – Connecting the 5DT HMD 800 Stereo to a PC

5.3 Connecting your 5DT HMD 800 to a Video Source

The 5DT HMD 800 can be connected to VCRs, DVD Players, Camcorders, Game Consoles or any other external video source. The video adapters can be connected using either S-Video cables, RCA cables or SCART cables. It is recommended that the S-video connection be used for optimal video image quality.

To connect using S-Video:

Connect the supplied S-Video cable to the video output source and the 5DT HMD 800 according to Figure 7.

To connect using RCA:

Connect the supplied audio and video cable according to the shape and color of the video/audio output terminal of the external source. See Figure 7.

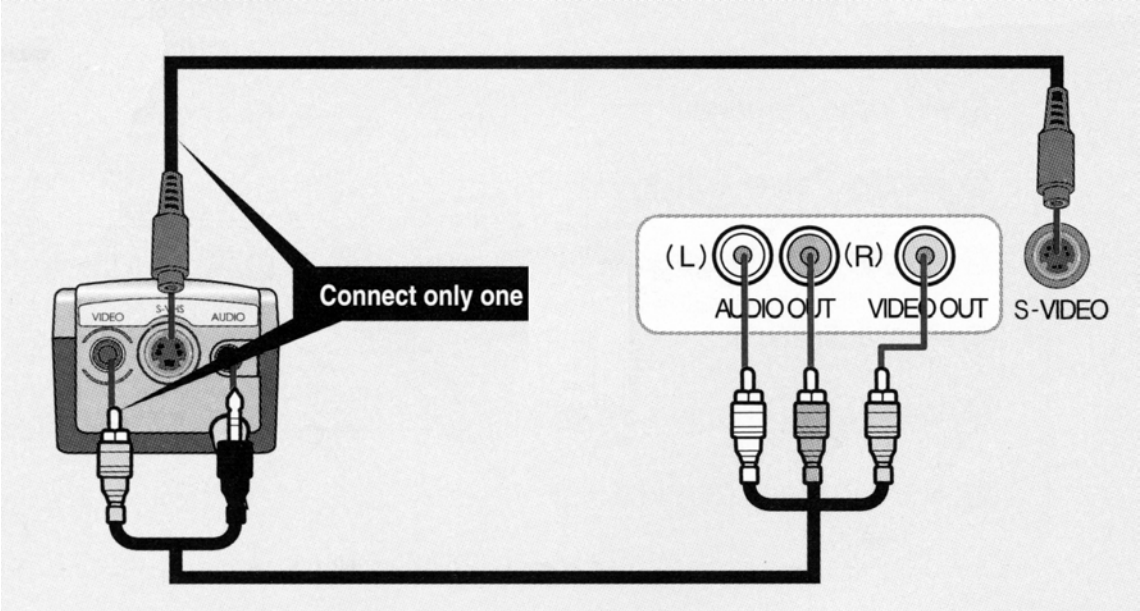

Figure 7 - Connecting the 5DT HMD 800 to an S-Video or RCA source

To connect using SCART:

a. Connect the SCART jack to the output terminal of the source as in Figure 8.
b. Connect the yellow video cable to the video input terminal of the 5DT HMD 800.
c. Connect the black audio cable to the audio input terminal of the 5DT HMD 800.

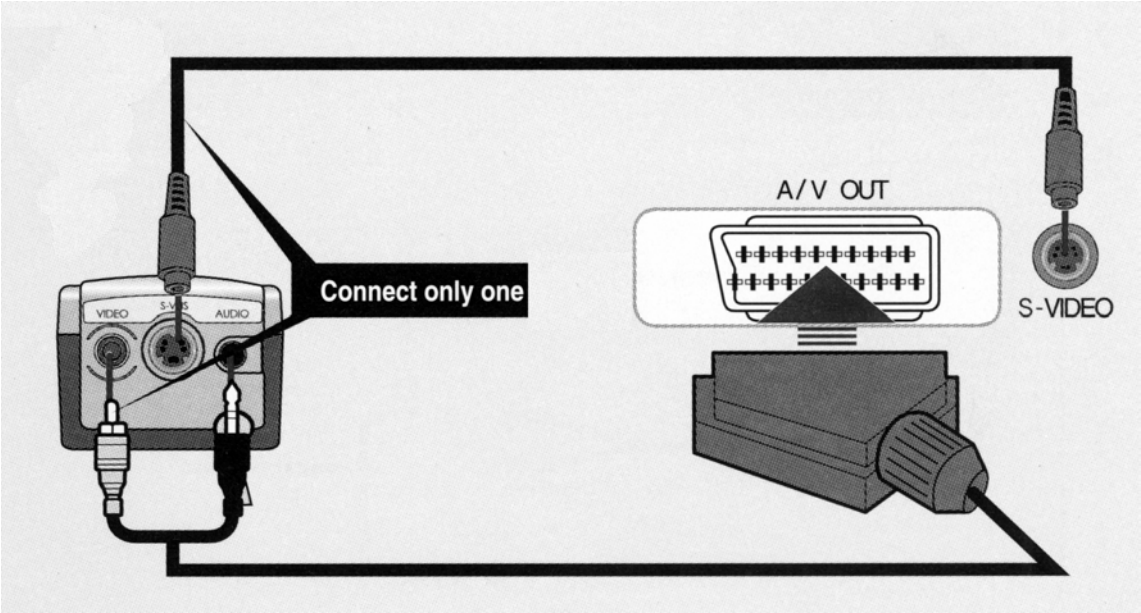

Figure 8 – Connecting the 5DT HMD 800 to an S-Video or SCART source

5.4 Connecting your 5DT HMD 800 Stereo to a Video Source

The 5DT HMD 800 Stereo can be connected to VCRs, DVD Players, Camcorders, Game Consoles or any other external video source that can be connected using RCA cables.

Connect the supplied audio and video cable according to the shape and color of the video/audio output terminal of the external source. See Figure 9.

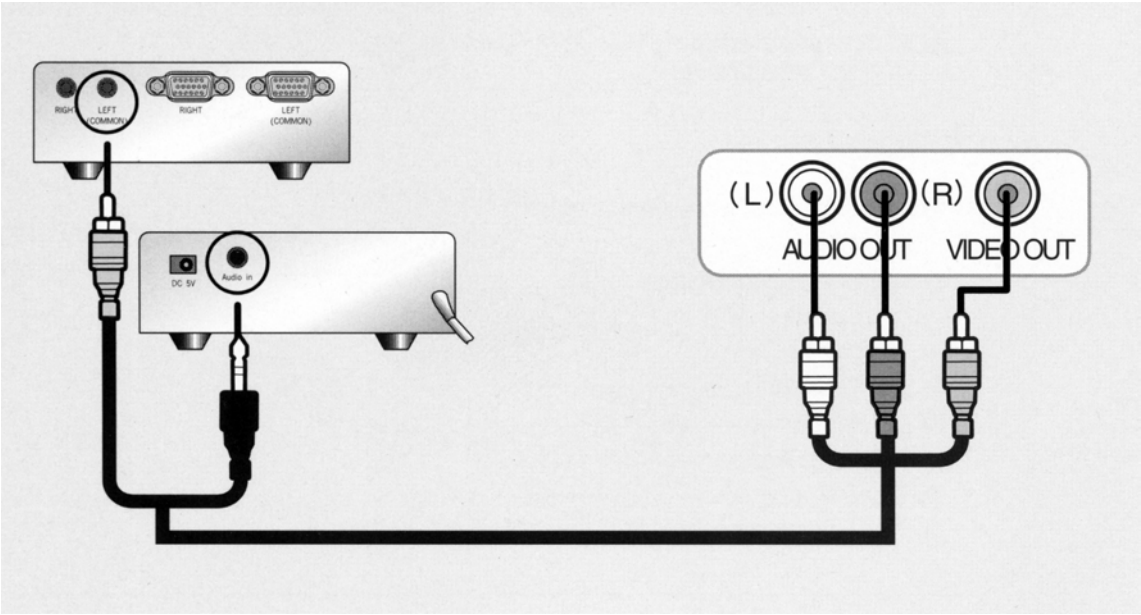

Figure 9 - Connecting the 5DT HMD 800 Stereo to a video source

6 Using your HMD

6.1 Basic Use – Donning the Headset

Warning: If the headset is not adjusted properly, it can lead to fatigue of the eyes or blurred vision. In general the headset should not be worn if the user is experiencing discomfort and should not be worn longer than one hour at a time without taking a break for 10-15 minutes.

To don the HMD, follow these steps:

a. Place the headset on top of the head and gently slide it down.

b. Adjust the top and back ratchets (see Figure 10) so that the headset is comfortable and that the displays are as close to the eyes as possible. Take care not to tighten the back ratchet too much.

c. Adjust the angle of the headset so that the optical display is 5 to 10 degrees below the horizontal.

d. Adjust the earphones so that they are in a comfortable position.

Figure 10 – Adjust the headset using the top and back ratchets

6.2 Basic Controls

a. Turn on the power to the external device and switch on the video signal.

b. Switch on the power button on the control box. The power lamp should light up.

c. If the picture is fuzzy or unfocused, adjust the IPD (Interpupillary Distance Dial) on the inside of the headset until the picture is clear (Figure 11). You may need to alternately close your left and right eye to ensure that the respective display is in the middle of the respective eye's vision.

Figure 11 – The Interpupillary Distance (IPD) Dial

6.3 Basic Controls – Navigating Menus

You can control the 5DT HMD 800 by using the **Up**, **Down**, **Menu** and **Sel** buttons.

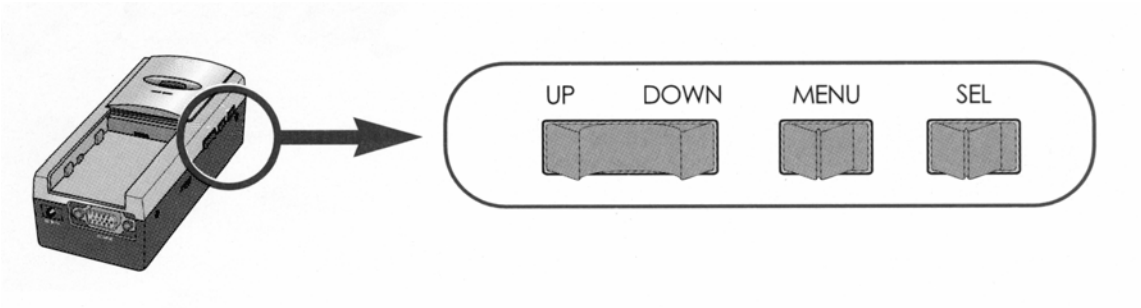

Figure 12 - Menu Navigation Buttons for the 5DT HMD 800

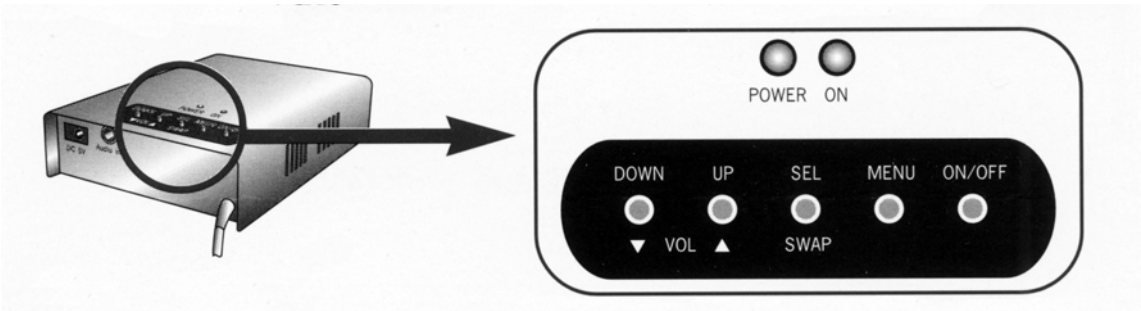

Figure 13 - Menu Navigation Buttons for the 5DT HMD 800 Stereo

a. The menu can be activated by pressing the **Menu** button.

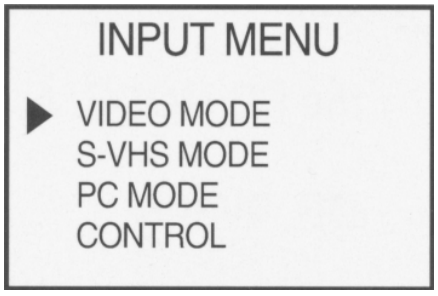

Figure 14 – Press the Menu Button for the input menu of the 5DT HMD 800

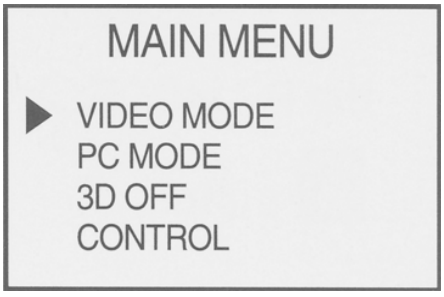

Figure 15 – Press the Menu Button for the main menu of the 5DT HMD 800 Stereo

b. Use the **Up** and **Down** buttons to navigate up and down or left and right through the menus.

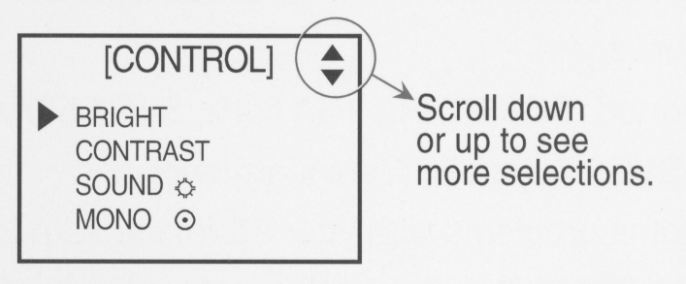

Figure 16 – Scroll Up and Down

c. Press the **Sel** button to select a chosen setting.

d. To exit the menu screen, press the **Menu** button until the menu screen disappears.

6.4 Changing the Display Mode

You can select the video input of your choice by changing the display mode in the menu in Figure 17 or Figure 18.

a. Turn on the video source and the 5DT HMD 800.

b. Press the **Menu** button.

c. Use the **Up** and **Down** buttons to the video mode.

d. Press **Sel** to select a choice.

In the PC mode, the picture might not show if the current input mode is not supported. The input mode should be DOS Mode, VGA 60Hz, SVGA 60Hz, SVGA 72Hz or SVGA 75Hz. Please note that the 5DT HMD 800 works with VESA standard video signals, which may not be supported with some graphics cards.

If you have any problems with the PC image, please refer to the sections on PC Jitter or PC Stabilization.

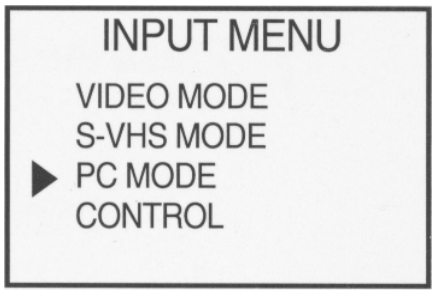

Figure 17 - Select the video mode from the Input menu of the 5DT HMD 800

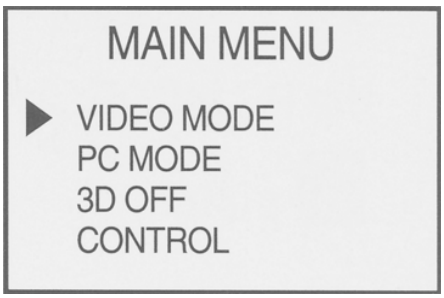

Figure 18 - Select the video mode from the Main menu of the 5DT HMD 800 Stereo

6.5 Stereo Modes

The 5DT HMD 800 operates in three different stereo modes: Interlaced 3D Mode (Line Sequential Stereo), Page Flipped 3D Mode (Frame Sequential Stereo) and Separated Input 3D Mode.

Interlaced 3D Mode (Line Sequential Stereo)

Interlaced 3D Mode is for use with the SVGA video signal. You must use the input port marked COMMON for this mode.

You can use 60Hz, 72Hz or 75Hz VESA Standard SVGA for this stereo mode. Stereo is currently not supported for VGA mode.

Interlaced 3D works by assigning different lines of the image to different displays. The even lines are sent to the left display and the odd lines to the right display as in Figure 19.

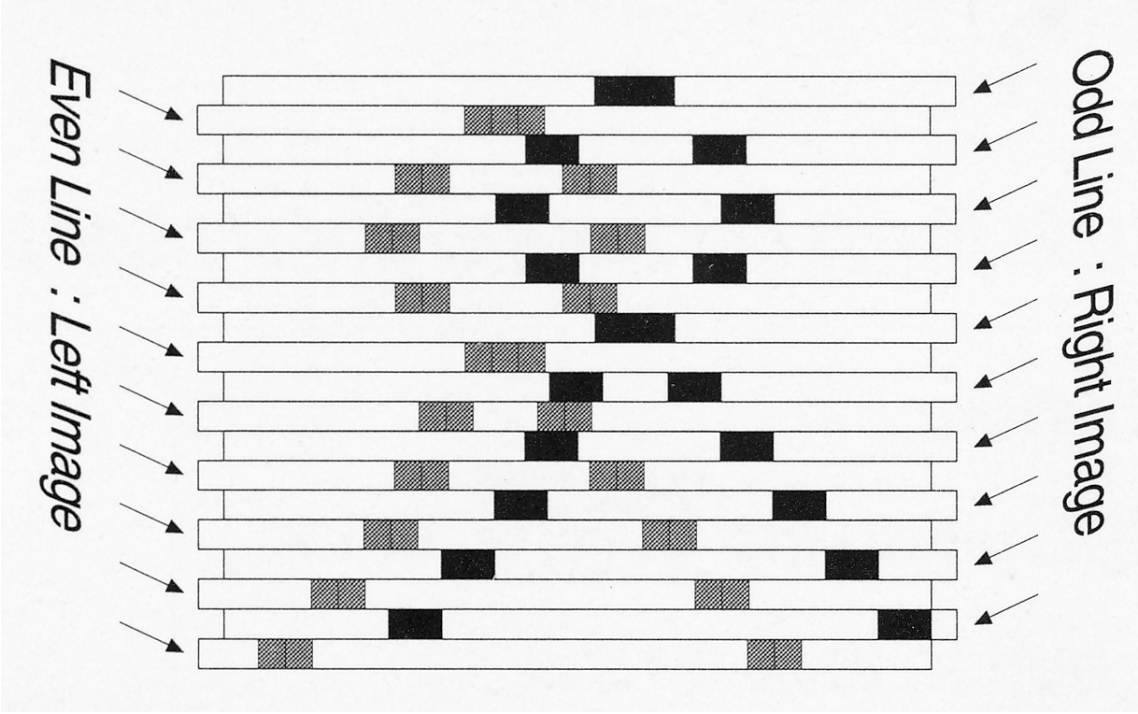

Figure 19 – Interlaced 3D Mode

Page Flipped 3D Mode (Frame Sequential Stereo)

Page Flipped 3D Mode can be used with both the SVGA and composite video signals. You must use the input port marked COMMON for this mode.

You can use 60Hz, 72Hz or 75Hz VESA Standard SVGA for the PC mode and NTSC, PAL or SECAM for video sources.

Page Flipped 3D works by assigning different frames of the image to different displays. The even frames are sent to the left display and the odd frames to the right display as in Figure 20.

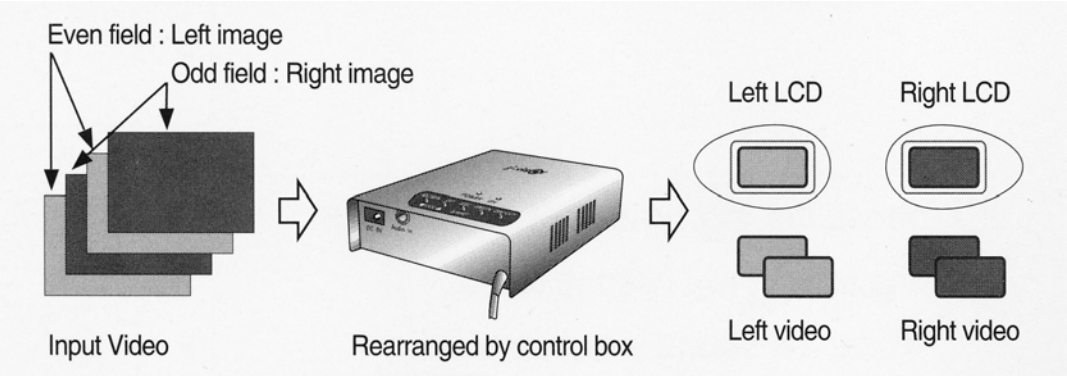

Figure 20 – Page Flipped 3D Mode

Separated Input 3D Mode

Separated Input 3D Mode is for use with both the SVGA and composite video signals. Separated Input 3D mode takes two separate video signals and displays them on the two different LCDs as in Figure 21.

You can use 60Hz, 72Hz or 75Hz VESA Standard SVGA for the PC mode and NTSC, PAL or SECAM for video sources.

The two separate video signals MUST have the same resolution as well as the same frequency. Please connect both SVGA cables before activating the 3D mode. Do not disconnect an SVGA cable during operation.

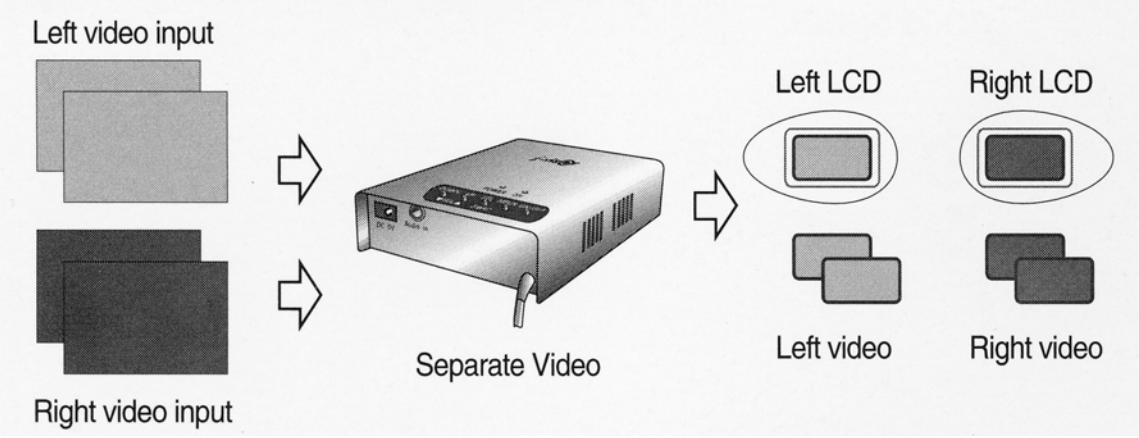

Figure 21 – Separated Input 3D Mode

6.6 Changing 3D Modes

a. Turn on the 5DT HMD 800 Stereo

b. Use the **Up** and **Down** buttons to move to 3D OFF and press **Sel**.

c. Press **Sel** to toggle between the different 3D modes. See Figure 22.

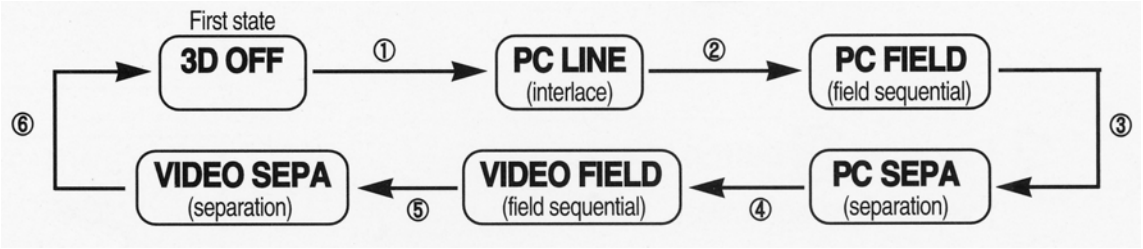

Figure 22 – Press Sel to change between the different 3D modes

d. After selecting the appropriate 3D mode, choose PC MODE or VIDEO MODE and press **Sel**.

*The left and right display signals can be swapped by pressing the **Sel** button without the menu being active.*

6.7 Changing Brightness and Contrast

a. Press the **Menu** Button.

b. Select CONTROL using the **Up** and **Down** buttons.

c. Press **Sel** to enter the CONTROL menu.

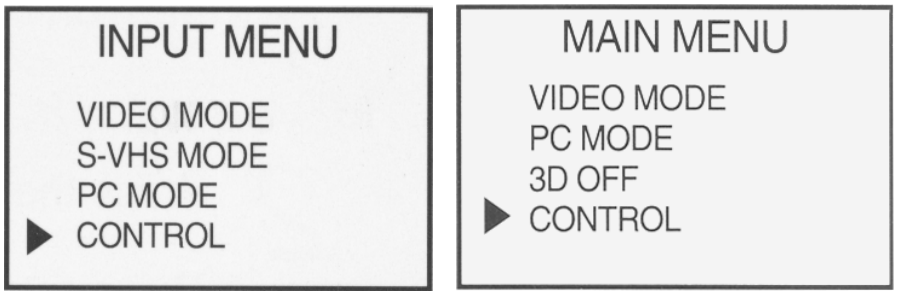

Figure 23 - Select the CONTROL Menu for the 5DT HMD 800 (Left) and 5DT HMD 800 Stereo (Right)

d. Select BRIGHT to adjust the brightness or CONTRAST to change the display contrast. Press **Sel** to select one of the options.

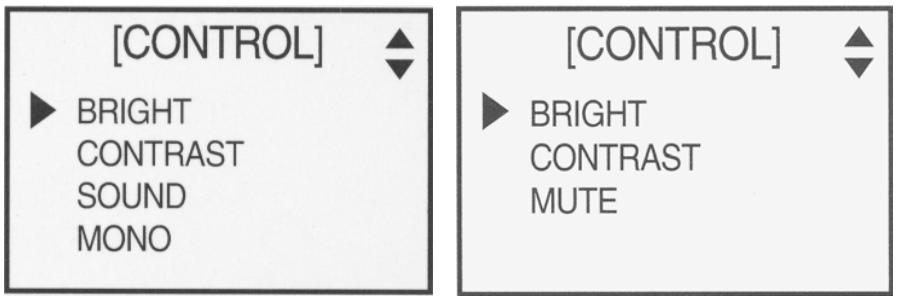

Figure 24 – Select BRIGHT or CONTRAST for the 5DT HMD 800 (Left) and 5DT HMD 800 Stereo (Right)

e. Adjust the brightness or contrast using the **Up** or **Down** buttons.

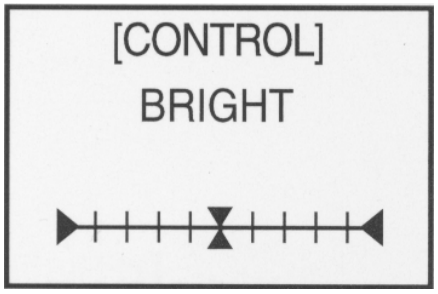

Figure 25 – Change the brightness or contrast using the Up and Down buttons

f. To exit the menu screen, press the **Menu** button until the menu disappears.

6.8 Controlling the Audio

If you want to adjust the volume level, turn the volume dial on the side of the control box for the 5DT HMD 800 or press the **Up** and **Down** buttons for the 5DT HMD 800 Stereo.

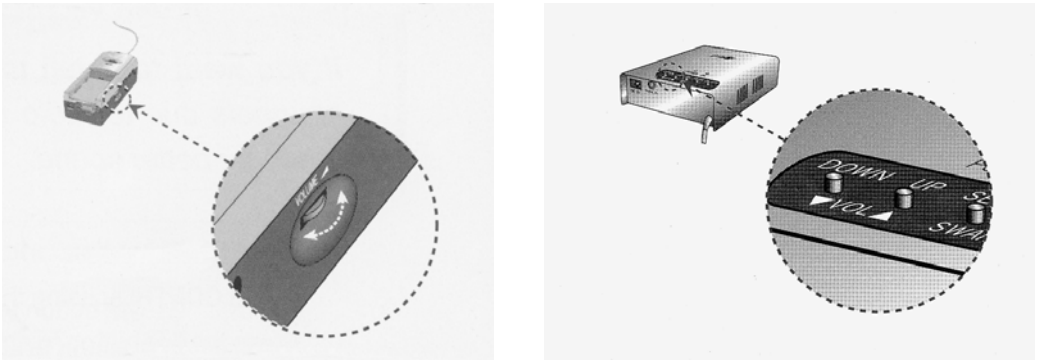

Figure 26 – Adjust the volume using the volume dial on the 5DT HMD 800 and the Up and Down Buttons on the 5DT HMD 800 Stereo.

The sound can also be muted or forced to mono mode (5DT HMD 800 only) by using the following menus:

a. Press the **Menu** button. Select the CONTROL menu using the **Up** and **Down** buttons. Press **Sel** to enter the control menu.

b. For the 5DT HMD 800, press the **Up** and **Down** buttons to select the SOUND option to switch the sound on or off (mute) or select the MONO option to force the sound to mono mode. For the 5DT HMD 800 Stereo, select MUTE to switch the sound on or off. Press **Sel** to select an option.

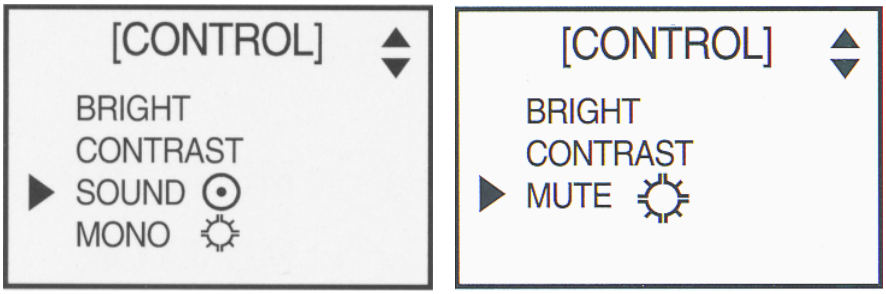

Figure 27 – Select SOUND or MUTE to mute the sound or MONO to force the sound to mono mode.

c. To exit the menu screen, press the **Menu** button until the menu disappears.

6.9 Adjusting Screen Flicker

In the PC mode, the picture might not show if the current input mode is not supported. The input mode should be DOS Mode, VGA 60Hz, SVGA 60Hz, SVGA 72Hz or SVGA 75Hz. Please note that the 5DT HMD 800 works with VESA standard video signals, which may not be supported with some graphics cards.

For the 5DT HMD 800, follow these instructions to minimize screen flicker:

a. Press the **Menu** button. Select the CONTROL menu using the **Up** and **Down** buttons. Press **Sel** to enter the control menu.

b. Select FLICKER-R if the flicker appears on the right screen or FLICKER-L if the flicker appears on the left screen.

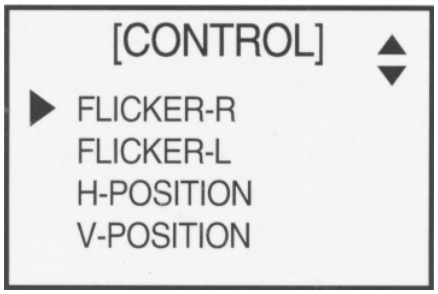

Figure 28 – Select FLICKER-R to adjust flicker on the right screen or FLICKER-L to adjust flicker on the left screen.

c. Press the **Up** and **Down** buttons until the screen flicker disappears. Press **Sel** to accept the new value.

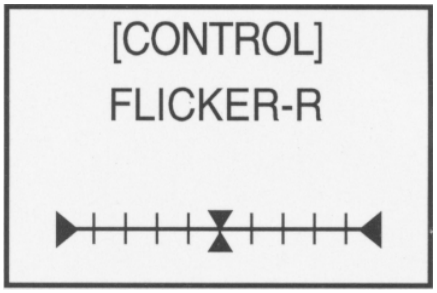

Figure 29 – Adjust the flicker value using the Up and Down buttons.

d. To exit the menu screen, press the **Menu** button until the menu disappears.

6.10 Horizontal and Vertical Position Adjustment

When the screen is not centered, H-POSITION and V-POSITION can be used to center the picture.

a. Press the **Menu** button. Select the CONTROL menu using the **Up** and **Down** buttons. Press **Sel** to enter the control menu.

b. Select H-POSITION to adjust the horizontal position of the image or V-POSITION to adjust the vertical position of the image. Press **Sel** to change one of the options.

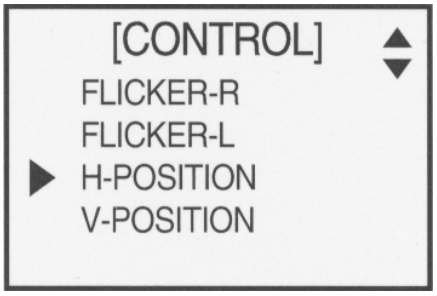

Figure 30 – Select H-POSITION to adjust the horizontal position of the image or V-POSITION to adjust the vertical position of the image.

c. Use the **Up** and **Down** buttons to center the image. Press **Sel** to accept the new value.

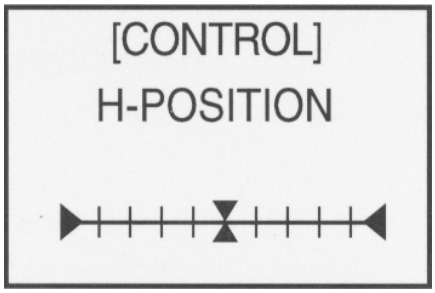

Figure 31 – Adjust the position value using the Up and Down buttons.

d. To exit the menu screen, press the **Menu** button until the menu disappears.

6.11 RGB and Video Color Adjustment

If the initial color tone is not optimized, the individual Red Blue and Green components can be adjusted as well as the overall color gain in Video mode.

a. Press the **Menu** button. Select the CONTROL menu using the **Up** and **Down** buttons. Press **Sel** to enter the control menu.

b. Select R COLOR ADJ to adjust the red component, G COLOR ADJ to change the green component or B COLOR ADJ to change the blue component. Select V COLOR ADJ to change the color gain in video mode. Press **Sel** to change one of the options.

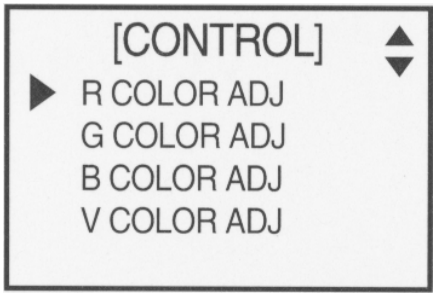

Figure 32 – Change the color intensities from the CONTROL menu.

c. Use the **Up** and **Down** buttons to adjust the color values. Press **Sel** to accept the new value.

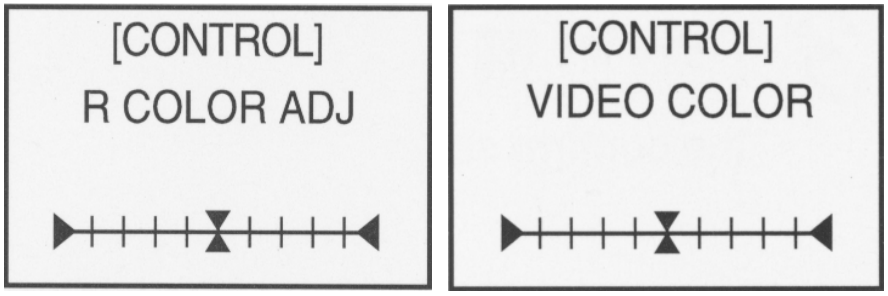

Figure 33 – Adjust the color values using the Up and Down buttons.

d. To exit the menu screen, press the **Menu** button until the menu disappears.

6.12 PC Jitter Adjustment

Timing errors often occur in graphics cards which might cause skewing of the image displayed. This can be rectified using the PC ADJUST option in the CONTROL menu.

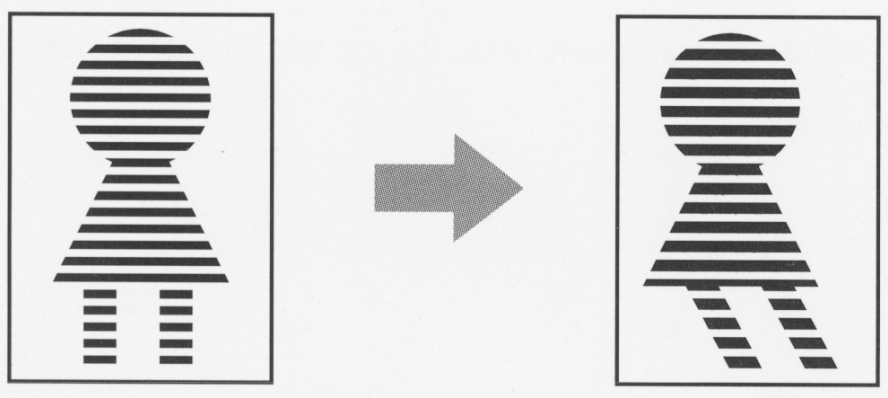

Figure 34 – Timing errors may cause skewing of the image

To compensate for this:

a. Press the **Menu** button. Select the CONTROL menu using the **Up** and **Down** buttons. Press **Sel** to enter the control menu.

b. Select H-POSITION to adjust the horizontal position of the image or V-POSITION to adjust the vertical position of the image. Press **Sel** to change the PC ADJUST value.

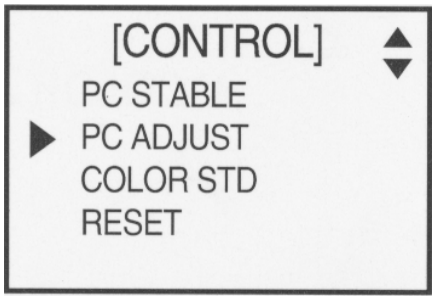

Figure 35 – Select PC ADJUST to fix skewing of the image.

c. Use the **Up** and **Down** buttons to adjust the timing. Press **Sel** to accept the new value.

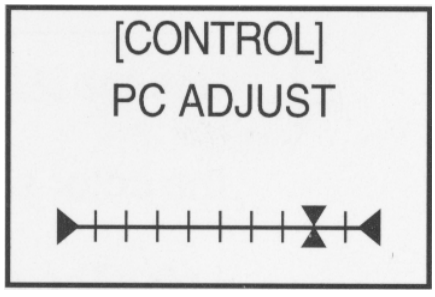

Figure 36 – Adjust the PC ADJUST value using the Up and Down buttons

d. To exit the menu screen, press the **Menu** button until the menu disappears.

6.13 Vertical Stabilization Adjustment

If any instability occurs in the vertical direction of the PC screen, it may be stabilized using the PC STABLE option in the CONTROL menu.

Please note that this option only has an effect in PC MODE.

a. Press the **Menu** button. Select the CONTROL menu using the **Up** and **Down** buttons. Press **Sel** to enter the control menu.

b. Select PC STABLE to adjust the vertical timing of the image. Press **Sel** to change the PC STABLE value.

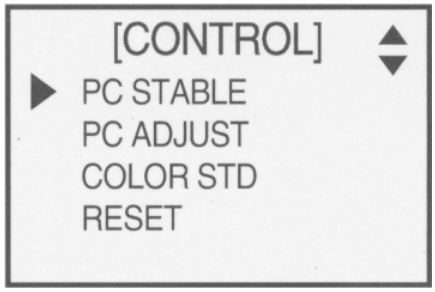

Figure 37 – Use PC STABLE to adjust for instability in the vertical image position.

c. Use the **Up** and **Down** buttons to stabilize the image. Press **Sel** to accept the new value.

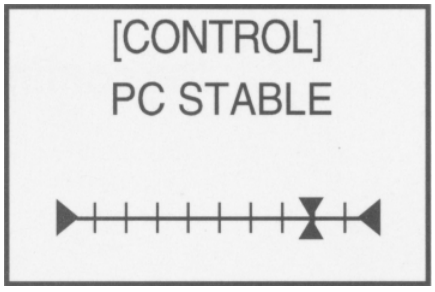

Figure 38 – Adjust the value using the Up and Down buttons.

d. To exit the menu screen, press the **Menu** button until the menu disappears.

6.14 Color Standard

The color standard can be alternated between PAL and NTSC.

a. Press the **Menu** button. Select the CONTROL menu using the **Up** and **Down** buttons. Press **Sel** to enter the control menu.

b. Select COLOR STD to adjust the color standard of the image. Press **Sel** to change the COLOR STD value.

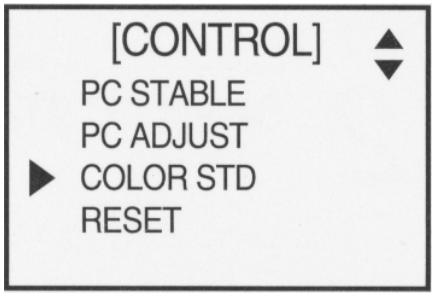

Figure 39 – Use COLOR STD to select the color standard.

c. Use the **Up** and **Down** buttons to alternate between NTSC and PAL color standards. Press **Sel** to accept the new value.

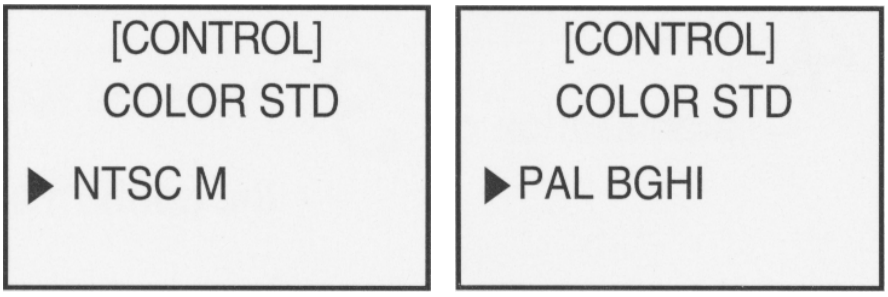

Figure 40 – Alternate between NTSC and PAL using the Up and Down buttons.

d. To exit the menu screen, press the **Menu** button until the menu disappears.

7 About 5DT

5DT <Fifth Dimension Technologies> is a high technology company specializing in Virtual Reality (VR). 5DT develops, produces and distributes affordable virtual reality hardware, software and systems. 5DT can also develop custom systems for all your VR needs.

5DT's focus is Virtual Reality Training Systems and Virtual Reality Peripherals.

The **Virtual Reality Hardware** currently produced by 5DT includes:

- 5DT Data Glove 5 (Right and Left)
- 5DT Data Glove 5-W (Wireless, Right and Left)
- 5DT Data Glove 16 (Right and Left)
- 5DT Data Glove 16-W (Wireless, Right and Left)
- 5DT Data Glove MRI 5 (For Magnetic Resonance Imaging environments)
- 5DT Data Glove MRI 16 (For Magnetic Resonance Imaging environments)
- 5DT Head Mounted Display (HMD) 800
- 5DT Head Mounted Display (HMD) 800 Stereo
- 5DT Virtual Binoculars (Mono and Stereo)
- 5DT 3-DOF Orientation Tracker
- 5DT Space Controller

Some of the **Training Systems (Computer Based Training [CBT])**, **Training Simulators** and **Technology Demonstrators** that have been developed by 5DT include:

Automotive

- Driver Training Simulator
- Road Safety Training System

Aviation

- Airspace Visualizer
- Air Traffic Control (ATC) Training Simulator
- Experimental Avionics Testbed
- Flight Visualization System
- Unmanned Aerial Vehicle (UAV) Training Simulator

Defense

- Air Defense Training Simulator
- Fiber Optic Guided Missile Training Simulator

- Integrated Virtual Battlefield
- Rocket Launcher Training Simulator
- Stand-off Weapon Training Simulator and Visualizer

High Voltage
- High Voltage Line Inspection Logging System
- High Voltage Line Inspection Program
- High Voltage Line Inspection Training System
- High Voltage Line Repair Training System
- High Voltage Yard Training Simulator

Industrial
- Crane Operator Training Simulator

Marine
- Marine Technology Demonstrator
- Unmanned Underwater Vehicle (UUV)/(ROV) Training Simulators

Medical
- Bronchoscope Training Simulator
- Exposure Treatment Phobia Simulator
- Gastroscope Training Simulator

Mining
- Continuous Miner Training Simulator (Mechanized Coal Mining)
- Surface Mining Training Simulator

Visualization
- Flight Visualization System
- Flow Visualization System

Other
- Landscape Generation and Real-time Rendering Technology

Information on these systems may be supplied on request.

8 Contact Information

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Rest of World –5DT (Fifth Dimension Technologies)
25 De Havilland Crescent, P.O. Box 5 Persequor Park, 0020 Pretoria, South Africa Tel: +27 12 349 2690 Fax: +27 12 349 1404 Email: info@5dt.com Web: www.5dt.com

Appendix A - Troubleshooting

There is no video Signal
• Check that the power adapter is plugged in and the POWER ON/OFF lamp is lit. • Check that the resolution of the input signal is 800x600. • Check that the video cable is plugged into the COMMON input port. • Check that the video mode is set up correctly. The video mode should be VGA 60Hz (negative sync) or VESA standard SVGA 60Hz, 72Hz or 75Hz (positive sync).

The 3D does not work in PC FIELD mode
• Check that the external source is connected to the COMMON input port. • Check that the video source is set up to display in Field Sequential mode.

One display has no image
• In PC 3D SEPA mode, the left and right signals must be the same mode. The signals must be plugged in and active before changing the mode.

The picture is dark and fuzzy
• Make sure that the external source is connected and is turned on. • Adjust the brightness of the display. • Adjust the Interpupillary Distance (IPD) dial on your headset.

There is no sound
• Check that the volume is not set to zero. • Check that the control is not muted.

The color appears incorrect
• Check the color control settings. • Check that the right color standard is being used (NTSC or PAL).

If you experience problems or have complaints, suggestions or other comments, please feel free to contact your supplier (preferably via e-mail). Please have the following information available, or include it in your written correspondence:

a. Computer processor make and model (e.g. Pentium III 1GHz)

b. Computer graphics card (e.g. GeForce III)

c. Operating system and version (e.g. Windows 2000)
d. The symptoms of the problem and what was happening when the problem occurred
e. Can you reproduce the problem easily? Describe how
f. Actions taken by yourself to solve the problem

You may also contact 5DT directly at support@5DT.com

Appendix B - Specifications

Model	5DT HMD 800 5DT HMD 800 Stereo
Signal System	VGA / SVGA / NTSC / PAL / S-Video
LCD	0.49 inch 1.44 million Dot Micro Display
Dot Number / panel	800 (H) x 600 (V)
Virtual Image Size	44-inch at 2m
Viewing Angle	32° Diagonal
Video Input	Y/C, Composite
PC Input	RGB, Positive Sync in SGVA Mode
Connectors PC Input	PC Input D-sub 15 pin
A/V Input	Stereo Mini Jack
Power Consumption	Approx 4W (5DT HMD 800) Approx 12W (5DT HMD 800 Stereo)
Operating Temperature Range	10 – 50 °C
Storage Temperature Range	0 – 60 °C
Dimensions	300 mm (L) x 200 mm (W) x 240 mm (H)
Weight	594 grams (without control box)

Appendix C - Product Warranty

Thirty (30) Day Customer Satisfaction Guarantee

If, for any reason, you are disappointed with this product, please contact your supplier. If you are not completely satisfied, you will be granted a 100% refund once the product is returned undamaged less a 15% restocking fee. Unfortunately, shipping costs cannot be refunded.

One (1) Year Product Warranty

5DT warrants to the original purchaser of the 5DT HMD 800 or 5DT HMD 800 Stereo that it will be free of defects in materials and workmanship for a period of one year from the original date of purchase. During the warranty period 5DT will at their discretion repair or replace (with a reconditioned unit) components that are defective.

Exclusions

The above warranty is provided for private use only and shall not apply to any commercial use of the product, including (but not limited to):

- Location Based Entertainment (LBE) applications
- Trade show demonstrations

This warranty shall not apply to defects resulting from the following:

- Misuse
- Improper or inadequate maintenance
- Unauthorized modification

Warranty Claim Instructions

We will try our best to get your repaired product back to you as soon as possible. In order to do this, we request your full cooperation with respect to the warranty claim instructions below.

Please adhere strictly to the following instructions:

a. Contact your supplier to determine if you need to return the product. If your supplier is unable to determine this, contact 5DT directly. Do not return a product to your supplier or to 5DT without first contacting them.

b. Your supplier (or 5DT) will issue you with a Return Material Authorization (RMA) number. Do not return a product to your supplier or to 5DT without an RMA number.

c. Pack the items to be returned securely using the original packaging material (if possible).

d. Please enclose the following:

   - Your original sales bill
   - Name, address, contact telephone/fax numbers
   - E-mail address
   - Reason for returning the item
   - RMA number

e. Mark your shipping container with the RMA number to expedite handling by customs or your supplier at 5DT.

f. Ship prepaid to your supplier or to 5DT. Shipping charges to 5DT are your responsibility. COD shipments will not be accepted by 5DT.

g. When completing customs or courier documentation, please clearly indicate: "Unit returned for repairs under warranty. Not for resale. No commercial value. Amount shown is for customs purposes only."

h. If you are shipping the unit internationally, you must supply/attach a commercial invoice with your shipment, otherwise the customs authorities in the destination country will not release the shipment. The invoice must indicate a value. We suggest that you assign a value of US$50 (maximum) on the invoice, so that 5DT is not required to pay excessive import taxes on this product.

i. It is important that you assign the same maximum value of US$50 to both the invoice and the courier waybill.

j. If you do not adhere to the warranty claim instructions and 5DT has to incur costs to release the shipment from customs, these costs will be for your account. 5DT will not return your product until these costs are paid.

5DT is not responsible for any damage that may occur during shipping.

Ship via courier to your supplier or (if arranged) to:

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Rest of World –5DT (Fifth Dimension Technologies)
25 De Havilland Crescent, P.O. Box 5 Persequor Park, 0020 Pretoria, South Africa Tel: +27 12 349 2690 Fax: +27 12 349 1404 Email: support@5dt.com